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REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(a)

In re Application of	
Application Number	Filed
08/332 046	11-1-94
Group/Art Unit	Examiner

Paper No. _____

Assistant Commissioner for Patents
Washington, DC 20231

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

- ☒ (A) referred to in United States Patent Number 6,248,516 column _____
- ☐ (B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e., Application No. _____ filed _____ on page _____ of paper number _____
- ☐ (C) an application that claims the benefit of the filing date of an application that is open to public inspection, i.e., Application No. _____ filed _____ or
- ☐ (D) an application in which the applicant has filed an authorization to lay open the complete application to the public.

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Unit: _____



US006248516B1

(12) **United States Patent**
Winter et al.

(10) Patent No.: **US 6,248,516 B1**
(45) Date of Patent: **Jun. 19, 2001**

(54) **SINGLE DOMAIN LIGANDS, RECEPTORS
COMPRISING SAID LIGANDS METHODS
FOR THEIR PRODUCTION, AND USE OF
SAID LIGANDS AND RECEPTORS**

4,965,188 10/1990 Mullis et al. .
4,978,743 12/1990 Selbeck et al. .
4,983,728 1/1991 Herzog et al. .
5,023,171 6/1991 Ho et al. .

(List continued on next page.)

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Güssow**, Abington, all of (GB)

FOREIGN PATENT DOCUMENTS

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(GB)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

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(22) Filed: **Jun. 6, 1995**

2016841 11/1990 (CA) .
2019323 12/1990 (CA) .
0 120 694 10/1984 (EP) .
0 125 023 11/1984 (EP) .
0 171 496 2/1986 (EP) .
0 173 494 3/1986 (EP) .
0 194 276 B1 9/1986 (EP) .
0 200 362 12/1986 (EP) .
0 201 184 B1 12/1986 (EP) .
0 239 400 9/1987 (EP) .
0 368 684 5/1990 (EP) .
2 137 631 10/1984 (GB) .
61-104788 5/1986 (JP) .
63-152984 6/1988 (JP) .
WO 86/01533 3/1986 (WO) .
WO 87/02671 5/1987 (WO) .
WO-A
88/01649 3/1988 (WO) .
WO 88/ 0663 9/1988 (WO) .
WO 88/06630 9/1988 (WO) .
WO 88/09344 12/1988 (WO) .
WO 89/00999 2/1989 (WO) .
WO 90/14424 11/1990 (WO) .
WO 90/14430 11/1990 (WO) .
WO 90/14443 11/1990 (WO) .
WO-A
97/08320 3/1997 (WO) .

Related U.S. Application Data

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1994, which is a continuation of application No. 07/796,805,
filed on Nov. 25, 1991, which is a division of application No.
07/580,374, filed on Sep. 11, 1990, now abandoned.

(30) Foreign Application Priority Data

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(51) Int. Cl.⁷ **C12Q 1/68**
(52) U.S. Cl. **435/6; 435/69.6; 435/252.33;
435/441; 435/446**
(58) Field of Search **435/240.2, 252.3,
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23.4, 23.5, 23.6**

(56) References Cited

U.S. PATENT DOCUMENTS

4,356,270 10/1982 Itakura .
4,642,334 2/1987 Moore et al. .
4,656,134 4/1987 Ringold .
4,683,195 7/1987 Mullis et al. .
4,683,202 7/1987 Mullis .
4,704,692 11/1987 Ladner .
4,711,845 12/1987 Gelfand et al. .
4,714,681 12/1987 Reading .
4,800,159 1/1989 Mullis et al. .
4,806,471 2/1989 Molin et al. .
4,816,397 3/1989 Boss et al. .
4,889,818 12/1989 Gelfand et al. .
4,937,193 6/1990 Hinchliffe et al. .
4,946,786 8/1990 Tabor et al. .
4,959,317 9/1990 Sauer .

OTHER PUBLICATIONS

Kokubu, F., et al, *The EMBO Journal*, vol. 7, No. 7, pp.
1979-1988, 1988 "Complete structure and organization of
immunoglobulin heavy chain constant region genes in a
phylogenetically primitive vertebrate".
Schwager, J., et al, *Proc. Natl. Acad. Sci. USA*, vol. 85, pp.
2245-2249, Apr. 1988 Immunology "Amino acid sequence
of heavy chain from *Xenopus laevis* IgM deduced from
cDNA sequence: Implications for evolution of immunoglo-
bulin domains".
Roth, M.E., et al, *Science*, vol. 241, pp. 1354-1358, Sep. 9,
1988 "Selection of Variable-Joining Region Combinations
in the α Chain of the T Cell Receptor".

(List continued on next page.)

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(57) ABSTRACT

The present invention relates to single domain ligands
derived from molecules in the immunoglobulin (Ig)
superfamily, receptors comprising at least one such ligand,
methods for cloning, amplifying and expressing DNA
sequences encoding such ligands, preferably using the poly-
merase chain reaction, methods for the use of said DNA
sequences in the production of Ig-type molecules and said
ligands or receptors, and the use of said ligands or receptors
in therapy, diagnosis and catalysis.

21 Claims, 23 Drawing Sheets